

# Investigation Process robustness linear terms

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## Introduction and background

### Factors

Name	Abbreviation	Units	Type	Settings
Temperature	Temp	C	Quantitative	60 to 75
Homogenisation speed	Hom	rpm	Quantitative	5000 to 1,2e+04
Polymer concentration	Pol	% (m/m)	Quantitative	0,63 to 0,77

### Responses

Name	Abbreviation	Units	Condition	Objective	Min	Target	Max	Predicted min	Predicted max	Response range
Viscosity	Vis	mPas	Observed	Predicted				--	--	
Droplet size	Dro	µm	Observed	Predicted				--	--	
Physical stability	Phy		Observed	Predicted				--	--	
Whiteness	Whi		Observed	Predicted				--	--	
Viscosity Zero shear	Vis_0	Pas	Observed	Predicted				--	--	
Viscosity high shear	Vis_H	Pas	Observed	Predicted				--	--	
Flow stress	Flo		Observed	Predicted				--	--	
Firmness	Fir	g	Observed	Predicted				--	--	
Consistency	Con	gs	Observed	Predicted				--	--	
Cohesiveness	Coh	g	Observed	Predicted				--	--	
Adhesiveness	Adh	gs	Observed	Predicted				--	--	

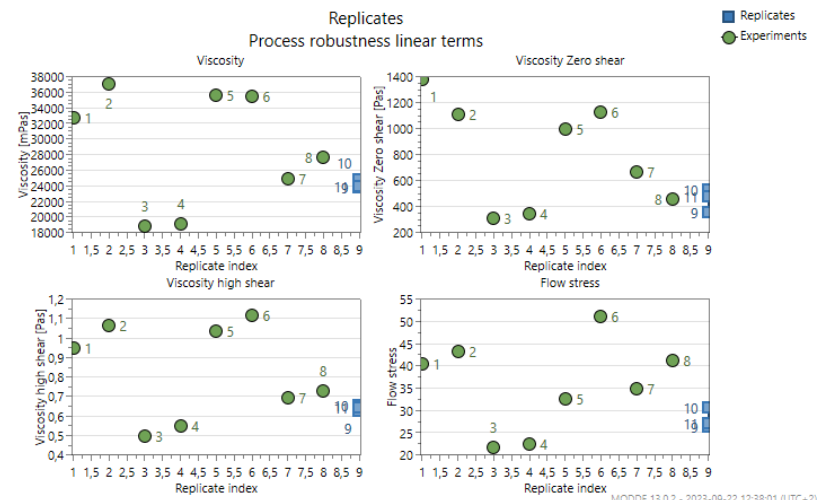
### Objective, model and design

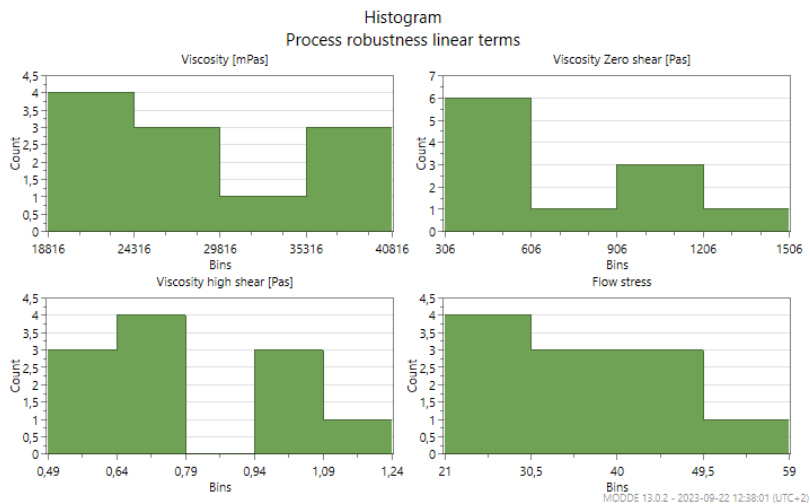
Objective	Screening
Process model	Interaction
Mixture model	--
Design	Full Fac (2 levels)
Runs in design	8
Center points	3
Replicated runs	0
Replicates	0
N = actual runs	11
Maximum runs	12000
Constraints	No

### Worksheet

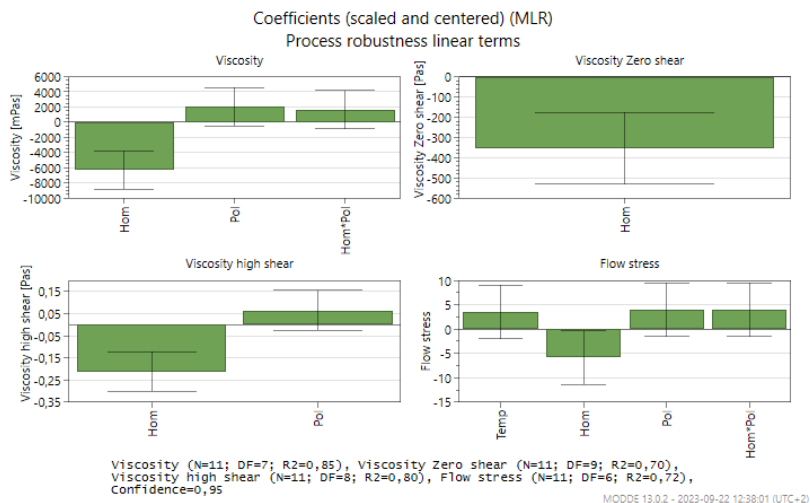
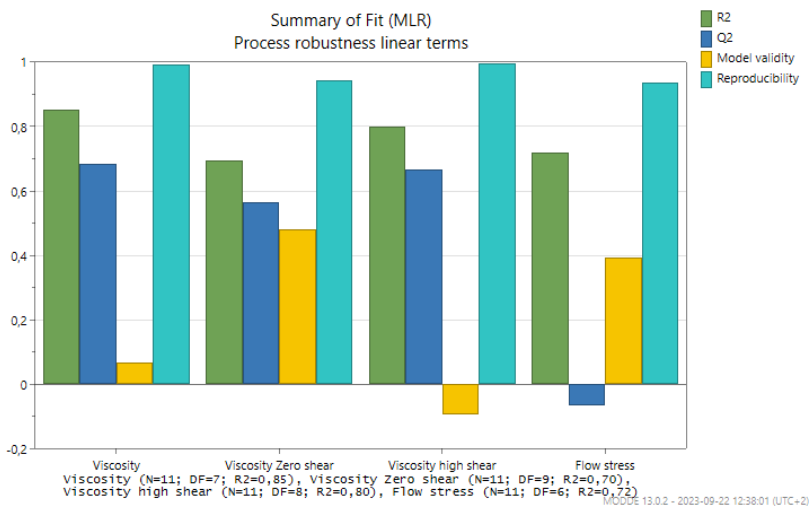
Exp No	Exp Name	Run Order	Incl/Excl	Temperature	Homogenisation speed	Polymer concentration	Viscosity	Droplet size	Physical stability	Whiteness	Viscosity Zero shear	Viscosity high shear	Flow stress	Firmness	Consistency	Cohesiveness	Adhesiveness
1	N1	10	Incl	60	5000	0,63	32782				1381	0,946	40,4	5,512	17,206	-2,534	-14,816
2	N2	9	Incl	75	5000	0,63	37032				1106	1,066	43,2	5,2	16,253	-2,519	-17,315
3	N3	1	Incl	60	12000	0,63	18816				306,4	0,4957	21,8	2,419	10,247	-1,291	-8,237
4	N4	6	Incl	75	12000	0,63	19050				345,2	0,5512	22,4	2,478	10,033	-1,402	-8,705
5	N5	11	Incl	60	5000	0,77	35650				993,9	1,036	32,6	4,886	15,276	-2,394	-16,188
6	N6	3	Incl	75	5000	0,77	35502				1126	1,116	51,1	4,693	14,807	-2,382	-18,422
7	N7	2	Incl	60	12000	0,77	24966				663,1	0,693	34,9	2,78	11,037	-1,664	-11,102
8	N8	5	Incl	75	12000	0,77	27684				459,5	0,7306	41,2	3,003	11,613	-1,751	-11,26
9	N9	7	Incl	67,5	8500	0,7	23750				350	0,6254	26,3	2,589	10,251	-1,57	-10,686
10	N10	4	Incl	67,5	8500	0,7	24768				527,2	0,6541	30,7	2,767	10,721	-1,582	-10,767
11	N11	8	Incl	67,5	8500	0,7	23868				472,9	0,6412	27	2,706	10,608	-1,578	-10,113

## Raw data inspection

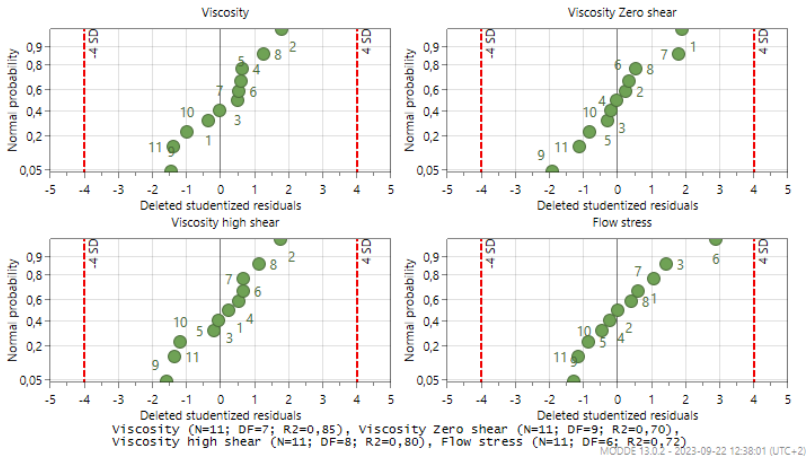




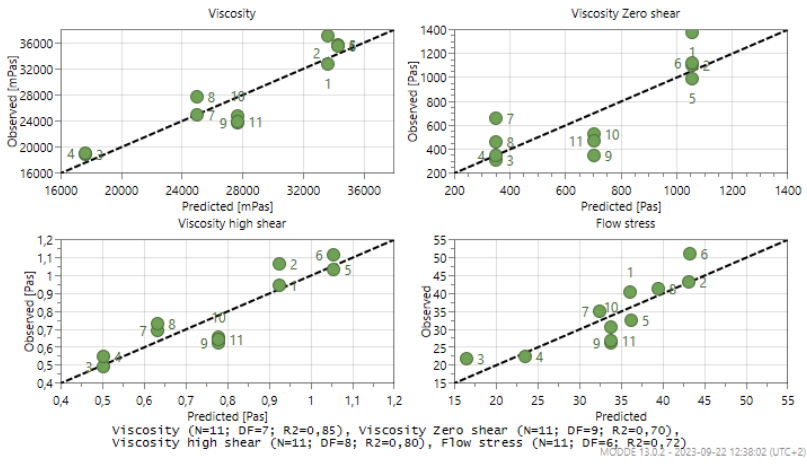
## Model diagnostics



Residuals Normal Probability (MLR)  
Process robustness linear terms



Observed vs. Predicted (MLR)  
Process robustness linear terms



Predictions

Insert here predicted results

Conclusion

Insert here a conclusion